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Amendment and/or Reply  
to the Office Action of 4 August 2005

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# 1. Amendments to the Claims:

A listing of the entire set of pending claims (including amendments to the claims, if any) is submitted herewith per 37 CFR 1.121. This listing of claims will replace all prior versions, and listings, of claims in the application.

## **Listing of Claims:**

1. (Currently Amended) ~~Linking~~ A linking unit (100) for generating linking information L indicating components of two consecutive extended segments sp and sc which partially overlap and which may be linked together in order to form a sinusoidal track, the segments sp and sc approximating consecutive segments of a sinusoidal audio or speech signal s, the linking unit comprising:
  - a calculating unit (120) for generating a similarity matrix  $S(m,n)$  in response to received sinusoidal code data including information about the amplitudes and the frequencies of M components  $x_m$  with  $m=1...M$  of the extended previous segment sp and of N components  $y_n$  with  $n=1...N$  of the extended current segment sc, wherein the values of said similarity matrix represent the similarity between the m'th component  $x_m$  of said extended previous segment sp and the n'th component  $y_n$  of said extended current segment sc for  $m=1...M$  and  $n=1...N$ ; and
  - an evaluating unit (140) for receiving and evaluating said similarity matrix  $S(m,n)$  in order to generate said linking information L by selecting those pairs of components (m,n) the similarity of which is maximal at least within the an overlapping region;  
characterised in that
  - the sinusoidal code data (Dp, Dc) is enlarged by further comprising information about the phase of at least some of the M components  $x_m$  and at least some of the N components  $y_n$ ;
  - the calculating unit (120) is adapted to calculate the similarity matrix  $S(m,n)$  by additionally evaluating the phase consistency between the m'th component  $x_m$  of the

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extended previous segment  $sp$  and the  $n$ 'th component  $y_n$  of the extended current segment  $sc$ .

2. (Original) The linking unit according to claim 1, characterised in that the calculating unit comprises:

- a first pattern generating unit (122) for generating said  $M$  components  $x_m(t)$  with  $m=1...M$  of the extended previous segment  $sp$  in response to the previous segment's enlarged sinusoidal code data ( $Dp$ );
- a second pattern generating unit (124) for generating said  $N$  components  $y_n(t)$  with  $n=1...N$  of the extended current segment  $sc$  in response to the current segment's enlarged sinusoidal code data ( $Dc$ ); and
- a calculation module (126) for calculating the similarity matrix  $S(m,n)$  on the basis of said received  $M$  components  $x_m(t)$  and of said received  $N$  components  $y_n(t)$  according to a predefined similarity measure.

3. (Original) The linking unit according to claim 2, characterised in that the calculating module (126) is adapted to calculate the overall similarity matrix  $S(m,n)$  according to:

$$S(m,n)=S_1(m,n)S_2(m,n)$$

wherein the first similarity matrix  $S_1(m,n)$  represents the similarity in shape and the second similarity matrix  $S_2(m,n)$  represents the similarity in amplitude or energy between the components  $m$  and  $n$ .

4. (Original) The linking unit according to claim 3, characterised in that the similarity  $S_1(m,n)$  is defined according to:

$$S_1(m,n)=\begin{cases} 1-|\rho_{m,n}-1|/D_1, & \text{if } |\rho_{m,n}-1| < D_1, \\ 0, & \text{elsewhere} \end{cases}$$

with  $0 < D_1 < 1$

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